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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,833

07/20/2005

Jusheng Wu

05503-PCT

1102

33804

7590

02/04/2009

LIN & ASSOCIATES INTELLECTUAL PROPERTY, INC.

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EXAMINER

KWIECINSKI, RYAN D

ART UNIT

PAPER NUMBER

3635

NOTIFICATION DATE

DELIVERY MODE

02/04/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/526,833	<b>Applicant(s)</b> WU ET AL.	
	<b>Examiner</b> RYAN D. KWIECINSKI	<b>Art Unit</b> 3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 January 2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-2, 7, 9, 11, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,657,607 to Collins et al.**

#### **Claim 1:**

Collins et al. disclose a method of fixing support means disposed within an evacuated glass panel (Fig.1), said evacuated glass panel including at least two planar glass sheets (2,3, Fig.1) having support means (5, Fig.1) disposed therein, said method comprising at least the following steps of:

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applying a solution layer (19, Fig.3) on a surface of a first planar glass sheet (Fig.3);

placing said support means on said solution layer (5, Fig.3; Column 7, lines 18-25) above said first planar glass sheet;

covering an upper surface of said support means with a second planar glass sheet (2, Fig.3; Column 6, lines 14-16, 44-56), said support means being stably positioned between said first and second planar glass sheets by the solution layer; and

heating said solution layer to dry so as to fix said support means between said first and second planar glass sheets (Column 6, lines 51-56);

wherein each of the above steps is performed in sequential order (Column 6, lines 51-56).

Collins et al. do not specifically disclose wherein the support means being stably positioned by liquid immersion and surface tension, but does disclose wherein the solution layer is formed from a liquid solution. Therefore it would have been obvious that the support pillars are in fact held in place by liquid immersion and the surface tension of the liquid solution.

**Claim 2:**

Collins et al. disclose the method of claim 1, wherein the solution layer partly covers (19, Fig.3; Column 7, lines 18-20) said surface of said first planar glass sheet.

**Claim 7:**

Collins et al. disclose the method of claim 1, wherein said second planar glass sheet is a top planar glass sheet (2, Fig.1 and 3) of said evacuated glass panel.

**Claim 9:**

Collins et al. disclose an evacuated glass panel (Fig.10), manufactured by the method according to claim 1 (see claim 1 above), comprising a top planar glass sheet (2, Fig.1), a bottom planar glass sheet (3, Fig.1), support means (5, Fig.1), and a seal component (4, Fig.1) around a periphery of said top and bottom planar glass sheet, wherein said support means are disposed between said top and bottom planar glass sheets (5, Fig.1); said support means is adhered to an upper surface of said bottom planar glass sheet through a residual solution layer (19, Fig.3); and a cavity between said top and bottom planar glass sheet is an evacuated space (Column 5, lines 38-39).

**Claim 11:**

Collins et al. disclose the glass panel of claim 9, wherein said support means comprises a plurality of support members each being a solid pillar (5, 9, Fig.3).

**Claim 14:**

Collins et al. disclose the glass panel of claim 9 wherein said residual solution layer is an adherent layer formed after volatilization of a non-organic solution (19, Fig.3); said adherent layer partly covers said upper surface of said bottom planar glass sheet (19, Fig.3; Column7, lines 18-20).

**Claim 16:**

Collins et al. disclose the glass panel of claim 14, wherein said non-organic solution comprises indium oxide (layer on the glass comprises indium tin oxide; Column 6, lines 10-12).

**Claims 3-4, 6, 8, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,657,607 to Collins et al. in view of US 6,479,112 B1 to Shukuri et al.**

**Claim 3:**

Collins et al. disclose the method of claim 1, but does not specifically disclose the method used to apply the solution layer.

Shukuri et al. discloses wherein the solution layer is applied by way of printing (Column 11, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the method of printing to apply the solution layer to the glass sheet. Printing is a well known method of applying thin layers to glass sheets. Any acceptable method that would successfully apply the solution layer to the glass sheet would have been obvious to have been used in the method of forming the evaporated glass panel.

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**Claim 4:**

Collins et al. in view of Shukuri et al. disclose the method of claim 3, Collins et al. discloses wherein the solution layer is an inorganic solution layer (Column 6, lines 33-35).

**Claim 6:**

Collins et al. in view of Shukuri et al. disclose the method of claim 4, wherein said non-organic solution comprises indium oxide (layer on the glass comprises indium tin oxide; Column 6, lines 10-12).

**Claim 8:**

Collins et al. disclose the method of claim 1, wherein the step of heating said solution comprises raising the temperature of the solution layer (Column 6, lines 51-56), but does not specifically disclose an oven drying process.

Shukuri et al. specifically disclose oven drying (Column 11, lines 30-35).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used an oven drying process if the solution layer needed to have the temperature raised. An obvious way to thoroughly heat a glass panel is by placing the glass panel in an oven with raised temperatures.

**Claim 17:**

Collins et al. disclose the evacuated panel according to claim 9, wherein said seal component is an edge frame component sealed and jointed vertically around said periphery of said top and bottom planar glass sheets (4, Fig.1; 42, Fig.8).

Collins et al. disclose a glass solder but do not specifically disclose the seal component affixed by sintering low melting point glass powders applied on an inner side of the side edge frame component.

Shukuri et al. do disclose the frame component formed from low melting point glass (Column 10, lines 31-32) and also disclose the use of low melting point glass frit to secure the support members to the glass (Column 11, lines 1-15) and also the process of sintering (Column 15, lines 50-60) to affix the support members to the glass sheets.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have affixed the seal component to the glass sheets using the sintering process and low melting point glass powders. Shukuri et al. discloses the materials and the process for securing the materials to the glass sheets so it would have been obvious to employ the process of sintering with the low melting point glass seal since it is a known process in the art of evacuated glass panels.

**Claim 18:**

Collins et al. in view of Shukuri et al. disclose the glass panel of claim 17, Shukuri et al. also disclose wherein said seal component is a glass strip (6, Fig.10).



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**Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,657,607 to Collins et al. in view of US 6,479,112 B1 to Shukuri et al. in view of US 6,365,242 B1 to Veerasamy.**

**Claim 5:**

Collin et al. in view of Shukuri et al. disclose the method of claim 4, but does not directly disclose wherein said organic solution layer is rosin spirits.

Veerasamy does not directly disclose using the rosin spirits as solution layers for the support means but does disclose using rosin spirits to aid in the hermetic sealing and bonding process of the peripheral seal of the glass panel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the organic solution of Veerasamy to fix the support means of the glass panel of Collins et al. to the upper surface of the bottom glass panel. The materials are known solutions that help in the bonding of the glass materials to one another in order to form a secure bond.

**Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,657,607 to Collins et al. in view of US 5,270,084 to Parker.**

**Claim 10:**

Collins et al. disclose the glass panel of claim 9 but does not disclose the planar sheet on which the support means is disclose to be an intermediate sheet.

Parker discloses three layers of planar glass sheets with intermediate sheet (A, Fig.6) having support means disposed on both sides in both cavities (23,25, Fig.6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the glass panel of Collins et al. with three planar glass sheets in order to enhance the thermal and heat transfer properties of the glass panel. It is notoriously well known that the thermal properties increase as another sheet of glass as well as another evacuated cavity is formed in the overall glass panel. The upper layer of the intermediate glass sheet and the solution layers the same as disclosed for the bottom glass sheet in claim 9 above.

**Claim 12:**

Collins et al. in view of Parker disclose the glass panel of claim 10, Collins et al. also disclose said support means comprise a plurality of support members uniformly disposed on said upper surface of said bottom planar glass sheet (5, Fig.2).

Parker also discloses said upper support means comprise a plurality of support members uniformly disposed on said upper surface of said top planar glass sheet (Parker discloses support members on the upper surface of A, Fig. 5-7, Fig.2).

**Claims 11 and 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,657,607 to Collins et al. in view of US 5,512,341 to Newby et al.**

**Claim 11 and 13:**

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Collins et al. disclose the glass panel of claims 9, but does not disclose wherein said support means is a hollow pillar with a hole in a side surface of the pillar.

Newby et al. disclose a hollow support means (6, Fig.2) with a hole (16, Fig.2) in a side surface.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the glass panel of Collins et al. with hollow support means with a hole in the side of the support means in order to connect the interior hollow portion with the cavity of the glass panel. The hole allows the support means to be filled with desiccant which will ensure the evacuated cavity remains moisture free. It is notoriously well known to include support means in the inter cavities of glass panels which have an interaction with the cavity in order to provide materials such as desiccants.

### ***Response to Arguments***

Applicant's arguments with respect to claim 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN D. KWIECINSKI whose telephone number is (571)272-5160. The examiner can normally be reached on Monday - Friday from 9 am to 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basil Katcheves can be reached on (571)272-6846. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDK

/Ryan D Kwiecinski/  
Examiner, Art Unit 3635  
/Basil Katcheves/  
Primary Examiner, Art Unit 3635

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